



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,383	03/31/2006	Hironari Akashi	MAT-8823US	2319
53473	7590	01/27/2009		
RATNERPRESTIA P.O. BOX 980 VALLEY FORGE, PA 19482			EXAMINER BAYOU, AMENE SETEGNE	
			ART UNIT 3746	PAPER NUMBER
			MAIL DATE 01/27/2009	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/574,383

**Applicant(s)**

AKASHI ET AL.

**Examiner**

AMENE S. BAYOU

**Art Unit**

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 October 2008.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.  
4a) Of the above claim(s) 4 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-3, 5-18 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 28 October 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Objections***

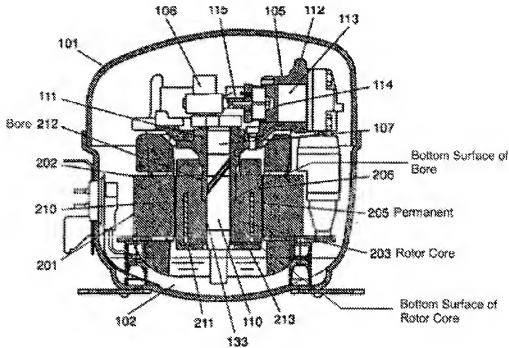
1. Claim 14 is objected to because of the following informalities: Claim 14 recites "an peripheral surface". The phrase should be replaced by phrases such as "a peripheral surface". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 1 and its dependent claims 2-18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.
4. In re claim 1, it recites "the permanent magnet is positioned in the rotor core so that it extends from a bottom surface of the rotor core at least to a bottom surface of the bore". Although the permanent magnet extends from a bottom surface of the rotor core (as shown in figure 4 and 5), neither the drawing nor the disclosure indicate that the permanent magnet extends to a bottom surface of the bore. The only indication from the drawings or the disclosure is that the permanent magnets externally surround the bottom surface of the bore. In addition the examiner hereby attaches the marked drawing that was submitted with the amendment dated on 10/28/08.



### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 1, 11, 12 are rejected under 35 U.S.C 103(a) as being unpatentable over

Tamura et al. (US patent number 6547538) in view of Sasaki et al. (US patent number 6727627 which is an equivalent to WO01/06624) .

7. In re claim 1, Tamura et al. '538 disclose an electric compressor including:

- A hermetic compressor ,in figure 1, comprising :a hermetic container (51) ;a motor element (53) accommodated in the hermetic container (51) ; and a compressing element (52) that is accommodated in the hermetic container (51)

and driven by the motor element (53) , wherein the compressing element (52) has a shaft including an eccentric shaft (56) and a main shaft (54), and a main bearing (57) for pivoting the main shaft (54) , the motor element is a bipolar permanent magnet motor (column 4,lines 37-38) that has a stator (67) including a stator core and a rotor (55) , a rotor (55) including a rotor core (68) ,the rotor (55) having a built-in permanent magnet (figure 2) in a rotor core (68) , a hollow bore (69) is formed at an end on the compressing element side of the rotor core, and the permanent magnet is positioned in the rotor core (68) so that it extends from a bottom surface of the rotor core (68) at least to a bottom surface of the bore (69), and a wide magnetic path (figure 2 and column 7,lines 58-67) is provided to smooth flow of magnetic flux by the permanent magnet. Tamura et al. '538,however fail to disclose the following limitation which is taught by Sasaki et al.'627:

- An axial length of the permanent magnet (45) being less than the axial length of the rotor core (42), in figure 18.

8. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the compressor of Tamura et al. 538 by making the axial length of the permanent magnet to be less than that of the rotor core as taught by Sasaki et al.'627in order to reduce the size of the compressor.

9. In re claim 11, Tamura et al. '538 in view of Sasaki et al.'627 as applied to claim 1 disclose the claimed invention:

Tamura et al. '538 disclose:

- The motor element is a self-starting permanent magnet synchronous motor (column 2, lines 16-17), the motor element has many conductor bars (71) of a cage conductor for start on the outer periphery of the rotor core, and the permanent magnet (70a) is disposed in the inner peripheral side of the conductor bars, in figure 3.

10. In re claim 12, Tamura et al. '538 in view of Sasaki et al.'627 as applied to claim 1 disclose the claimed invention:

Tamura et al. '538 disclose:

- The permanent magnet (70a, 70b) is a rare-earth magnet, in figure 2 and column 5, lines 1-3.

11. Claims 2,3,5-10,13-18 are rejected under 35 U.S.C 103(a) as being unpatentable over Tamura et al.'538 in view of Sasaki et al.'627 as applied to claim 1, further in view of Kojima et al. (US patent publication number 2004/0191094).

12. In re claim 2 Tamura et al. 538 in view of Sasaki et al.'627 disclose the claimed invention except the following limitation which is taught by Kojima et al.'094:

- Axial length of the rotor core (315) is longer than axial length of a stator core (113) of the stator, hence the wide magnetic path is provided to smooth the flow of the magnetic flux by the permanent magnet, in figure 3.

13. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the compressor of Tamura et al. 538 and Sasaki et al.'627 by making the axial length of the rotor core longer than the stator core as taught by Kojima et al.'094 in order to reduce the size of the compressor.

14. In re claim 3, Tamura et al. 538 in view of Sasaki et al.'627 further in view of Kojima et al. '094 as applied to claim 2 disclose the claimed invention:

Kojima et al.'094 disclose:

- Both axial ends of the rotor core (115) are disposed outside both axial ends of the stator core (113), respectively, in figure 3.

15. In re claim 5, Tamura et al. 538 in view of Sasaki et al.'627 further in view of Kojima et al. '094as applied to claim 2 disclose the claimed invention:

Kojima et al.'094 disclose:

- Axial length of the permanent magnet (115a) is shorter than axial length of the rotor core (115), and the permanent magnet covers a region having no bore in the axial direction of the rotor, in figure 1.

16. In re claim 6, Tamura et al. 538 in view of Sasaki et al.'627 further in view of Kojima et al. '094 as applied to claim 2 disclose the claimed invention:

Kojima et al.'094 disclose:

- The rotor core (315) has a cylindrical through hole having a first diameter into which the shaft (104) is inserted, the bore is a cylindrical recessed part that is formed in the upper part of the through hole and has a second diameter (306) larger than the first diameter (i.e. the diameter that fits shaft 104) , the permanent magnet (315a) has an axial length shorter than the axial length of the rotor core (315) , and covers a region of the first diameter in the rotor in an axial direction of the rotor core, in figure 3 and 4.

17. In re claim 7, Tamura et al. 538 in view of Sasaki et al.'627 further in view of Kojima et al. '094 disclose the claimed invention:

Kojima et al.'094 disclose:

- The main bearing (120), in figure 3, is made of magnetic material (paragraph [0039]), and the wide magnetic path is provided (i.e. due to the fact that axial length of the rotor core is longer than axial length of a stator core of the stator as shown in figure 3 and also discussed in claim 2 above) to smooth the flow of the magnetic flux by the permanent magnet.

18. In re claim 8, Tamura et al. 538 in view of Sasaki et al.'627 further in view of Kojima et al. '094 disclose the claimed invention:

Kojima et al.'094 disclose:

- The main bearing (120) is one of a casting and a molded product that is made of iron- based sintered material, in paragraph [0039]). Please note that in accordance to MPEP 2113, the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight. Please also note that even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product, i.e., the main bearing, does not depend on its method of production, i.e. ----. ***In re Thorpe, 227 USPQ 964, 966 (Federal Circuit 1985).***

19. In re claim 9 and 13, Tamura et al. 538 in view of Sasaki et al.'627 further in view



of Kojima et al. '094 disclose the claimed invention except mentioning that the axial length of the bore is 1/3 of axial length of the rotor core or more. It would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the proper axial length of the bore based to get the practical compressor size, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

20. In re claim 10 and 14, Tamura et al. 538 in view of Sasaki et al.'627 further in view of Kojima et al. '094 disclose the claimed invention except mentioning that the clearance between the surface of the bore and the Outer diameter of the main bearing is 0.5 to 3 mm. It would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the proper clearance based on design parameters, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

21. In re claim 15 and 16, Tamura et al. 538 in view of Sasaki et al.'627 further in view of Kojima et al. '094 disclose the claimed invention:

Tamura et al. 538 disclose:

- The motor element is a self-starting permanent magnet synchronous motor (column 2, lines 16-17), the motor element has many conductor bars (71) of a cage conductor for start on the outer periphery of the rotor core, and the

permanent magnet (70a) is disposed in the inner peripheral side of the conductor bars, in figure 3.

22. In re claim 17 and 18 , Tamura et al. 538 in view of Sasaki et al.'627 further in view of Kojima et al. '094as applied to claim 2 disclose the claimed invention:

Tamura et al. 538 disclose:

- The permanent magnet (70a, 70b) is a rare-earth magnet, in figure 2 and column 5, lines 1-3.

### ***Response to Arguments***

23. Applicant's arguments with respect to claims 1 -18, filed on October 28 2008 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

24. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amene S. Bayou whose telephone number is 571-270-3214. The examiner can normally be reached on Monday-Thursday, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on 571-272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free)? If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devon C Kramer/  
Supervisory Patent Examiner, Art  
Unit 3746